

Serial No. 09/808,131
Docket No. NEC2120-US
(SAL018)

13

REMARKS

Entry of this Amendment is proper because it does not raise any new issues requiring further search by the Examiner, narrows the issues on appeal, and is believed to place the present application in condition for immediate allowance.

As a preliminary matter, Applicant's representative would like to thank the Examiner for courtesies extended in the telephone conference conducted on October 6, 2004, in which the Examiner kindly clarified his position as set forth in the Response to Arguments in the present Office Action. Applicant has summarized the telephone conference in the remarks set forth below to comply with the requirements of M.P.E.P. § 713.04.

Claims 1-17, 19-25, and 27-38 are all the claims presently pending in the application.

To speed prosecution of the present application, as discussed below, claims 1 and 4-8 are amended to define more clearly the features of the claimed invention by incorporating the features of the preamble into the body of the claims, and further by incorporating somewhat similar features as claims 18 and 26 into the independent claims. Claims 18 and 26 correspondingly have been canceled without prejudice or disclaimer.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

14

Claims 1-8 stand rejected on prior art grounds. With respect to the prior art rejections, claims 1, 2, 5, 7, 13-17, 21-33, and 30-33 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kagawa (U.S. Patent No. 5,687,094). Claims 3, 4, 6, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kagawa in view of Miyakawa (U.S. Patent No. 6,226,092). Claims 9, 11, 12, 18-20, 24, 29, and 34-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kagawa in view of Yada (U.S. Patent No. 5,418,728). Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kagawa in view of Yada and further in view of Miyakawa.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention is directed to a bug (i.e., a problem or defect part) collection apparatus and a method of collecting bug information.

An illustrative, non-limiting aspect of the present invention, as defined by independent claim 1, relates to a bug collection apparatus for collecting bug information. The apparatus includes means for detecting when a design modification is made to a bug in a drawing designed by using a computer aided design system, first means for detecting whether the modification to the bug exceeds a pre-established criterion, and second means for collecting and recording a bug information corresponding to the modification when the first means detects that the modification exceeds the pre-established criterion.

Another exemplary aspect of the invention, as defined by independent claim 9, relates to a bug collection apparatus for automatically collecting bug information when modifying a design using a computer aided design system. The apparatus includes means

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

15

for detecting whether a design modification is generated, means for automatically determining whether the design modification exceeds a predetermined criterion, and means for automatically collecting and recording a bug information corresponding to the modification when the modification exceeds the predetermined criterion.

Still another exemplary aspect of the invention, as defined by independent claim 29, relates to a bug collection apparatus for automatically collecting bug information when modifying a design using a computer aided design system. The apparatus includes a detector that detects whether a design modification is generated, a determiner that automatically determines whether the design modification exceeds a predetermined criterion, and a collector that automatically collects and records a bug information corresponding to the modification when the modification exceeds the predetermined criterion.

Another exemplary aspect of the invention, as defined by independent claim 36, relates to a bug collection apparatus for automatically collecting bug information when modifying a design using a computer aided design system. The apparatus includes a detector that detects whether a design modification is generated, a determiner that automatically determines, prior to an end of a design modification process, whether the design modification exceeds a predetermined criterion, and a collector that automatically collects and records a bug information corresponding to the modification when the modification exceeds the predetermined criterion.

The system and methods defined, for example, by independent claims 4-8 and 11 recite somewhat similar features as independent claims 1, 9, 29, and 36.

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

16

The claimed invention provides a simple configuration that is easily implemented and that performs automatic collection of design bug information when a design modification is made (i.e., at the time the design modification is made) to the drawing, without human intervention (e.g., see specification at page 5, lines 25-28).

II. THE PRIOR ART REJECTIONS

As mentioned above, claims 1, 2, 5, 7, 13-17, 21-33, and 30-33 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kagawa, claims 3, 4, 6, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kagawa in view of Miyakawa, claims 9, 11, 12, 18-20, 24, 29, and 34-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kagana in view of Yada, and claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kagana in view of Yada and further in view of Miyakawa.

In the Response to Arguments, the Examiner alleges that "*the terminology used in the claims as currently amended does not necessitate that the information must be collected "automatically" ... when a design modification is made. Rather, as currently amended, claims 1-8 continue to read on the Kagawa reference, and therefore remain rejected*" (see Office Action at page 13, lines 2-6).

In the Response to Arguments, the Examiner also states that "*In addition, Examiner notes that applicant's arguments are all directed towards the preamble of the associated independent claims. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but,*

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

17

instead, the process steps or structural limitations are able to stand alone" (see Office Action at page 13, lines 7-11).

In the aforementioned telephone conference, the Examiner kindly clarified his position, stating that incorporating the features of the preamble of independent claim 1, for example, into the body of the claim should overcome the rejection under 35 U.S.C. § 102 based on Kagawa. On the other hand, the Examiner also agreed that incorporating some of the features of the dependent claims (e.g., claims 9-38) into the independent claims, for example, also should overcome the rejection under 35 U.S.C. § 102 based on Kagawa.

In the telephone conference, the Examiner explained, however, that he would not comment, at that time, on whether such amendments would render the claims allowable, since the rejection under 35 U.S.C. § 103(a) based on Kagawa and Yada would need to be considered in light of Applicant's traversal position.

While Applicant asserts that all of the previously pending claims are patentable over the prior art of record, to speed prosecution, independent claims 1 and 4-8 have been amended to incorporate the features recited in the preamble into the body of the claims, and further to incorporate somewhat similar features as dependent claims 18 and 26, respectively, which correspondingly have been canceled without prejudice or disclaimer.

Accordingly, Applicant's submit that the rejection of claims 1, 2, 5, 7, 13-17, 21-33, and 30-33 under 35 U.S.C. § 102(b) as being anticipated by Kagawa and the rejection of claims 3, 4, 6, and 8 under 35 U.S.C. § 103(a) as being obvious over Kagawa and Miyawaka have been rendered moot by the amendments set forth above. Thus,

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

18

Applicant's remarks below address the rejections of all of the pending claims under 35 U.S.C. § 103(a) based on Kagawa, Yada, and Miyakawa.

With respect to the rejection under 35 U.S.C. § 103(a) as being unpatentable over Kagawa and Yada, the Examiner alleges that it would have been obvious to combine Kagawa and Yada to arrive at the claimed invention.

For the following reasons, Applicant respectfully traverses this rejection.

First, Applicant respectfully submits that it would not have been obvious to combine Kagawa and Yada to arrive at the claimed invention.

For example, Kagawa relates to a verification process that is performed at the end of the design modification process to verify whether the design will yield a product which will satisfy the product specifications (e.g., see Kagawa at column 1, lines 5-10). That is, Kagawa generates a list of specification items that must be verified and a verification list which is then verified at a later time (i.e., after all of the changes to the drawings, specifications, and tolerances have been completed).

As shown in the Figure of Kagawa, the design data (e.g., see the Figure of Kagawa at step 5) and the specified items (e.g., see step 8) are used to generate a verification list (e.g., see step 10). After the list has been generated, the list is evaluated and verified (e.g., see steps 11-19). Upon completion of the verification process, a report is generated (e.g., see steps 22-22).

Thus, Kagawa relates to a verification process that is performed at the end of the design modification process to verify whether the design will yield a product which will satisfy the product specifications.

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

19

On the other hand, Yada relates to a support device for a computer aided design (CAD) system to improve efficiency of associated design programs by realizing automatic recognition of associated design programs and automatic data transfer between the steps of a process of design, which can include three applications such as a circuit design, a simulation, and a packaging design (e.g., see Yada at Abstract; see also Yada at column 1, lines 6-15).

Yada states that "if a lower module makes a change, a higher module which includes the lower module can be specification and this can be immediately reflected to the other design execution elements of the applications" (e.g., see Yada at column 2, lines 67-68, and column 3, lines 1-3). Yada further states that, "[e]ven if a change is made at the last stage of the circuit design step to the module due to, for example, fixing the bug, it can be immediately reflected to the simulation step which is already in process" (e.g., see Yada at column 3, lines 10-14; emphasis added).

That is, Yada is concerned with posting changes made to one of the design execution elements (e.g., a circuit design) to the succeeding design execution elements (e.g., a simulation an/or a packaging design) such that plural design execution elements can be run in parallel without causing inconsistencies (e.g., see Yada at column 3, lines 61-68 and column 4, lines 1-5). In this way, Yada aims to reduce the time for the design process and improves efficiency in a CAD system (e.g., see Yada at id.).

Yada is not, however, concerned with a verification process for verifying whether the design will yield a product which will satisfy the product specifications, or for that matter, when such a verification process would be performed.

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

20

In fact, Yada only generally mentions the step of “fixing the bug” and provides no further disclosure with respect to the step of “fixing the bug”. Indeed, Yada merely discloses (at best) that the step of “fixing the bug” is performed “at the last stage of the circuit design step” (i.e., after all design modifications have been completed, or in other words, after the design modification process has been completed; e.g., see Yada at column 3, lines 10-14; emphasis added).

Accordingly, Applicant submits that both Kagawa and Yada are directed to different inventions for solving different problems, and moreover, involve completely different steps from one another by which the different problems are solved.

That is, Kagawa is concerned with a verification process that is performed at the end of the design modification process to verify whether the design will yield a product which will satisfy the product specifications. On the other hand, Yada is concerned with posting changes made to one of the design execution elements to the succeeding design execution elements such that plural design execution elements can be run in parallel without causing inconsistencies.

Thus, Applicant submits that the ordinarily skilled artisan would not have looked to Yada (which is not concerned with the verification process) to improve the verification process of Kagawa.

Moreover, even assuming *arguendo* that it would have been obvious to combine Kagawa in view of Yada, Applicant respectfully submits that the resulting combination still would not arrive at the claimed invention.

That is, Applicant submits that the teachings of Yada (which, at best, merely *mention* fixing a bug at the last stage of a design modification process) would not have

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

21

motivated the ordinarily skilled artisan to modify the verification process of Kagawa (which similarly performs a verification process at the end of a design modification process) to arrive at a bug collection apparatus that is capable of detecting when a design modification is made to a bug in a drawing designed by using a computer aided design system and automatically performing collection of design bug information when the design modification is made, according to the novel and unobvious combination of elements defined, for example, by independent claim 1.

As mentioned above, the claimed invention provides a simple configuration that is easily implemented and that performs automatic collection of design bug information when a design modification is made (i.e., at the time the design modification is made) to the drawing, without human intervention (e.g., see specification at page 5, lines 25-28).

Particularly, independent claim 1 recites, *inter alia*, a bug collection apparatus for collecting bug information, including:

means for detecting when a design modification is made to a bug in a drawing designed by using a computer aided design system;

first means for detecting whether said modification to said bug exceeds a pre-established criterion; and

second means for collecting and recording a bug information corresponding to said modification when said first means detects that said modification exceeds said pre-established criterion (emphasis added).

Moreover, independent claim 9 recites, *inter alia*, a bug collection apparatus for automatically collecting bug information when modifying a design using a computer aided design system, including:

means for detecting whether a design modification is generated;

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

22

means for automatically determining whether said design modification exceeds a predetermined criterion; and
means for automatically collecting and recording a bug information corresponding to said modification when said modification exceeds said predetermined criterion (emphasis added).

On the other hand, independent claim 29 recites, *inter alia*, a bug collection apparatus for automatically collecting bug information when modifying a design using a computer aided design system, including:

a detector that detects whether a design modification is generated;
a determiner that automatically determines whether said design modification exceeds a predetermined criterion; and
a collector that automatically collects and records a bug information corresponding to said modification when said modification exceeds said predetermined criterion (emphasis added).

Independent claim 36 recites, *inter alia*, a bug collection apparatus for automatically collecting bug information when modifying a design using a computer aided design system, including:

a detector that detects whether a design modification is generated;
a determiner that automatically determines, prior to an end of a design modification process, whether said design modification exceeds a predetermined criterion; and
a collector that automatically collects and records a bug information corresponding to said modification when said modification exceeds said predetermined criterion (emphasis added).

Independent claims 4-8 and 11 recite somewhat similar features as independent claims 1, 9, 29, and 36.

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

23

In the present Office Action, the Examiner acknowledges that “*Kagawa does not explicitly teach means for detecting whether a design modification is generated*” (see Office Action at page 7, numbered paragraph 8, lines 11-12).

The Examiner further acknowledges that “*Kagawa does not explicitly teach means for detecting said design modification, means for continuously detecting design modifications, nor means for automatically detecting design modifications*” (see Office Action at page 8, lines 13-15).

The Examiner also acknowledges that “*Kagawa does not explicitly teach that said information is collected when a modification is detected*” (see Office Action at page 9, lines 3-4 and 13-14; see also page 10, lines 5-6).

Moreover, the Examiner acknowledges that “*Kagawa does not explicitly teach a detector that detects whether a design modification is generated during a design modification process*” (see Office Action at page 11, lines 4-5).

The Examiner acknowledges that “*Kagawa does not explicitly teach that this determination is made at a time of said design modification or at a time when said design modification is made*” (see Office Action at page 11, lines 4-5).

On the other hand, as mentioned above, Yada only generally mentions the step of “fixing the bug” and provides no further disclosure with respect to the step of “fixing the bug”. Indeed, Yada merely discloses (at best) that the step of “fixing the bug” is performed “at the last stage of the circuit design step” (i.e., after all design modifications have been completed, or in other words, after the design modification process has been completed; e.g., see Yada at column 3, lines 10-14; emphasis added).

Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

24

Thus, Applicant respectfully submits that, even assuming *arguendo* that it would have been obvious to combine Kagawa and Yada, the teachings of Yada do not make up for the deficiencies of Kagawa.

Accordingly, Applicant submits that Kagawa and Yada, either alone or in combination, do not disclose or suggest the novel and unobvious apparatus and method according to the present invention in which bug information is automatically and instantaneously detected, collected, and recorded when each modification exceeds the pre-established criterion.

Applicant respectfully submits that Kagawa neither discloses nor suggests all of the recitations of independent claims 1, 4-9, 11, 29, and 36.

Moreover, claims 2, 3, 13-17, 19-25, 27, 28, 34, 35, 37, and 38 also are patentable over Kagawa and Yada, either alone or in combination, by virtue of their respective dependencies, as well as for the additional features recited therein.

With respect to claim 10, the Examiner alleges the Kagawa and Yada, as further modified by Miyakawa, would render obvious the features of claim 10. For the following reasons, Applicant respectfully traverses this rejection.

Applicant respectfully submits that Miyakawa similarly does not disclose or suggest the novel and unobvious apparatus and method according to the present invention in which bug information is detected, collected, and recorded when each modification exceeds the pre-established criterion, as defined, for example, by independent claims 1, 4, 6, 8, and 9. Indeed, the Office Action does not rely on Miyakawa for such a disclosure.

Thus, claim 10 also would not have been obvious over Kagawa, Yada, and Miyakawa, either alone or in combination.

Serial No. 09/808,131
Docket No. NEC2120-US
(SAL018)

25

For the foregoing reasons, Applicant submits that Kagawa, Yada, and Miyakawa, either alone or in combination, do not disclose or suggest the novel and unobvious combination of features recited in the claimed invention, or for that matter, the advantages derived therefrom.

Therefore, Applicant respectfully requests that the Examiner withdraw these rejections and permit claims 1-17, 19-25, and 27-38 (all of the pending claims) to pass to immediate allowance.

III. CONCLUSION

In view of the foregoing, Applicant submits that claims 1-17, 19-25, and 27-38, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

Applicant respectfully requests a personal interview with the Examiner.
Accordingly, Applicant respectfully requests that the Examiner contact the undersigned attorney at the local telephone number below to arrange for the interview at the Examiner's earliest convenience.


Serial No. 09/808,131
Docket No. NEC2120-US
(SAI.018)

26

The Commissioner is hereby authorized to charge any deficiency in fees or to
credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,


Date: October 29, 2004


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CERTIFICATE OF TRANSMISSION

I certify that I transmitted via facsimile to (703) 872-9306 the enclosed
Amendment under 37 C.F.R. § 1.116 to Examiner Alexander J. Kosowski on October 29,
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